A NEW TURBO EQUALIZER WITH LINEAR COMPLEXITY (MonPmPO1)

Author(s) :

Dimitris Ampeliotis (University of Patras, Greece)
Kostas Berberidis (University of Patras, Greece)

Abstract :

In this paper a new soft input − soft output (SISO) equalizer of linear complexity is developed. The algorithm can be used in the so−called Turbo equalization scheme as a low cost solution in place of the Maximum A−Posteriori (MAP) equalization algorithm which has a prohibitive complexity for most real world applications. The proposed equalizer consists of two parts, namely, a Soft Interference Canceller (SIC) and a pre−processing part which is a new Variable−Threshold Decision Feedback Equalizer (VTDFE). The role of the second part is to increase the amount of a−priori information supplied to the SIC. Simulation results have shown that the proposed turbo equalizer exhibits a superior performance as compared to the turbo equalization scheme based on the conventional SIC as well as other linear complexity SISO equalizers.

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